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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,104	10/29/2003	Michael Pollock	ECV-105-A	6606

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EXAMINER	
THOMAS, LUCY M	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,104	POLLOCK ET AL.	
	Examiner	Art Unit	
	Lucy Thomas	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/21/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 6-8, 12-14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (US 6,088,210) in view of Nuckolls et al. (US 3,483,430). Goodman discloses an apparatus 10 (Figure 1, magnet protector) for protecting an energized inductive device, an industrial electromagnet from the effects of dissipating stored magnetic energy when supply voltage to the electromagnet is removed while the electromagnet is energized (open circuit), comprising: a diode D4, D5, D6, D9, D10 connected across terminals of the inductive device such that when the inductive device is normally energized, the diode is reverse biased. Goodman does not disclose a spark gap connected in series with the diode; and a housing enclosing the spark gap, the housing filled with an inert gas. Nuckolls disclose an apparatus (Figure 2) for an inductive load 7 comprising a spark gap 3 connected in series with a diode 9 and a housing enclosing the spark gap, the housing filled with inert gas (gas tube 3 is a spark gap enclosed by a housing filled with inert gas, Column 2, lines 32-34). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Goodman's diode configuration (D4, D5, D6, D9, D10) connected across the terminals of the inductive device with a spark gap 3 in series with the diode (Goodman, D4, D5,

D6, D9, D10) and a housing enclosing the spark gap, the housing filled with inert gas as taught by Nuckolls because the spark gap prevents leakage current and a series diode acts as the current interrupter to deionize the gas tube, and the inert gas enclosed in the housing is ionizable to provide current flow through the gas tube.

Regarding Claim 2, Nuckolls discloses the apparatus, further comprising a resistance 5 in series with the diode and the spark gap. Regarding Claim 3, Nuckolls discloses the apparatus, wherein the resistance comprises at least one resistor 5. Regarding Claim 6, Goodman discloses the apparatus wherein the inductive device is an electromagnet. Regarding Claim 7, Nuckolls discloses the apparatus, further comprising a resistance 5 in series with the diode and the spark gap. Regarding Claim 8, Nuckolls discloses the apparatus, wherein the resistance comprises at least one resistor 5. Regarding method clams 12-14, 17-19, one would necessarily perform the recited method steps in the assembly of the apparatus rejected above.

3. Claims 4-5, 9-10, 11, 15-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (US 6,088,210) in view of Nuckolls (US 3,483,430) and Czerlinski (US 4,520,249). Nuckolls fails to disclose a charge valve as recited in Claims 4 and 9, and a purge valve as recited in Claims 5 and 10, and an air pressure gauge as recited in Claim 11 for the spark gap housing. Czerlinski discloses a spark gap housing 10 with a charge valve 51 and purge valve 55, and an air pressure gauge 31. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the housing of Nuckolls with a charge valve, purge valve and air pressure gauge as taught by Czerlinski to maintain a controlled environment of inert gas in the housing for

ionization of the inert gas to provide current flow through the gas tube. Claims 15 and 20 recite a step of filling the spark gap housing with the inert gas using a charge valve extending into the housing. Claim 16 recites a step of extending a purge valve into the housing, the purge valve operable to allow at least one of venting and removal of the inert gas from the housing. Regarding these recited method steps, one would necessarily perform these steps in the assembly of the apparatus rejected above.

Response to Arguments

4. Applicant's arguments filed on 12/21/2005 have been fully considered. Applicant's arguments with respect to claims 1-3, 6-8, 12-14, and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Regarding arguments directed toward the Goodman reference, the Goodman reference is relied upon to teach the diode connected across the terminals of an inductive device for protecting the energized inductive device from an open circuit. Arguments directed toward Kesserling and Gotisar references are rendered moot as these references have been withdrawn.

The Examiner does not agree with the Applicant that Goodman is teaching the spark gaps are unsatisfactory as protection elements. Goodman indicates that the spark gap is a crude device, but has not indicated that it is unusable. At line 21, Column 2, Goodman is indicating that other types of arresters are unsatisfactory, but has not included spark gap as one of these devices. Although Goodman indicates that spark gaps are usable but have some drawbacks when used as an electromagnetic

protector, it would be obvious to those skilled in the art at the time the invention was made that Goodman may be combined with teachings to protect electromagnet devices with a spark gap because such a combination would protect the electromagnetic device where the spark gap prevents leakage current and a series diode which is reverse biased when the magnet is normally energized, acts as the current interrupter to deionize the gas, and the inert gas enclosed in the housing is ionizable to provide current flow through the gas tube.

Regarding arguments directed toward Czerlinski reference, Applicant states that Czerlinski is non-analogous art that one of ordinary skill in the art of protection of inductive devices from open circuits would not be aware, and that Czerlinski is directed to selectively producing defined temperature rises in highly localized areas in the art of electrical heating devices, particularly heat exchangers. However, in the rejection above, Czerlinski is not relied upon for the mechanics of the heating device, but for the spark gap and assembly for the insertion and venting and removal of inert gas and is relied upon solely for this teaching. Furthermore, regarding the area of the invention involving discharge devices for inductive devices and the use of gas tubes and inert gas, one skilled in the art would necessarily be concerned with controlling the insertion and venting and removal of inert gas.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-

6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT
January 24, 2006

PHUONG T. VU
PRIMARY EXAMINER